

## REMARKS

### I. Amendments

Claim 1 is amended by deleting certain language of the preamble and by adding language that recites further structure. Also, dependent claim 2 is canceled with the limitations thereof being incorporated into independent claim 1.

The newly recited structure of claim 1 provides for the requirement that the “tangentially arranged inlet” is to be “fluidly connected to a reactor riser”. Support for this limitation may be found at page 10, lines 2 – 15 of the specification. The functional language that defines the tangentially arranged inlet is modified so as to clarify that it is to receive the suspension from the reactor riser. Support for this definition is also found at page 10, lines 2 – 15 of the specification.

### II. First §103 Rejection

Claims 1-6 and 8-13 are rejected under 35 U.S.C. 103 as being unpatentable over U.S. 4,997,800 to Child in view of U.S. 4,692,311 to Parker et al. In view of the amendments to the claims and the following remarks this rejection is traversed. Reconsideration and withdrawal of the rejection are, therefore, respectfully requested.

Child discloses a process for FCC catalyst regeneration. *See e.g.*, Abstract and column 1, lines 13-15. Child teaches the use of a cyclone placed within a regenerator for receiving flue gas and catalyst from within the regenerator and for recovering the entrained catalyst for return to the dense bed of catalyst. *See, e.g.*, Figures and column 8, line 67 to column 9, line 28. The claimed invention, on the other hand, includes a cyclone that is fluidly connected to an FCC reactor riser, which provides for the receipt of a suspension therefrom. Child does not teach a separator that is directly connected with an FCC reactor riser for directly receiving an FCC reactor riser effluent. Further, Child does not teach or even remotely suggest the relative dimensions of the tangential inlet opening and the inlet opening to the gas outlet as are recited in the claim defining the invention.

Now in considering the Parker et al. patent, it actually teaches away from the claimed invention. Parker et al teaches an opening to the clean gas outlet of the cyclone that extends into the swirl inducing zone of the cyclone. *See* Figure 2 and column 6, lines 8-17. This is the very feature that is not desired by Applicants’ claimed invention. *See* Applicants’ specification at page 10, line 10 to page 11, line 3.

In view of the above-noted distinctions, it should be recognized that the combination of the cited references does not give an apparatus as now claimed. Therefore, it is respectfully asserted that the Examiner's first obviousness rejection is overcome. Withdrawal of the rejection is respectfully requested.

### III. Second §103 Rejection

Claims 1-5, 7, and 11-13 are rejected under 35 U.S.C. 103 as being unpatentable over U.S. 4,997,800 to Child in view of U.S. 5,869,008 to Dewitz. In view of the amendments to the claims and the following remarks this rejection is traversed. Reconsideration and withdrawal of the rejection are, therefore, respectfully requested.

The Child patent is discussed above.

Considering the Dewitz patent, certain of the Examiner's characterizations of its teachings are incorrect. The cyclones are not, as the Examiner states, contained within a reactor vessel, but, rather, they are contained within disengager-stripper vessel. See Figure 1 and column 4, lines 16-57.

The cited references do not teach or even remotely suggest the relative dimensions of the tangential inlet opening and the inlet opening to the gas outlet as are recited in the claim defining Applicants' invention. In fact, the references actually teach away from these dimensions by teaching an opening to the clean gas outlet of the respective cyclones that extends into the swirl inducing zone thereof. See Figure of Dewitz patent.

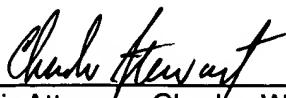
In view of the above-noted differences, Applicants respectfully assert that the invention as now claimed is patentably distinct over the cited prior art. Withdrawal of the rejection is, therefore, respectfully requested.

### IV. Conclusion

Applicants hereby respectfully request early allowance of the claims now pending in this application.

Respectfully submitted,

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